WHAT IS CLAIMED IS:

1. A plasma chamber coupleable to a processing chamber for assisting in the analysis of at least one processing gas for performing a process in a processing chamber, comprising:

a processing gas inlet port coupleable to the processing chamber for receiving the at least one processing gas from the processing chamber;

at least one reference gas inlet port for receiving at least one reference gas from at least one reference gas source;

a cavity for receiving the at least one processing gas and the at least one reference gas; and

an energy source for exciting the at least one processing gas and the at least one reference gas to form a plasma.

2. The plasma chamber of claim 1, further comprising at least one probe for measuring the energy of at least one species in the plasma.

3. The plasma chamber of claim 1, further comprising an optical window for coupling radiation in the plasma to an optical transmission path coupleable to an spectrometer.

4. The plasma chamber of claim 1, wherein the cavity is cylindrical.

5. The plasma chamber of claim 4, wherein the cavity is lined with a dielectric.

6. The plasma chamber of claim 1, wherein the processing gas inlet port comprises a flange.

7. The plasma chamber of claim 6, wherein the at least one reference gas inlet port is located on the flange.

8. The plasma chamber of claim 1, wherein the at least one reference gas inlet port is proximate to the processing gas inlet port.

9. The plasma chamber of claim 1, further comprising an exhaust line coupled to the cavity.

10. The plasma chamber of claim 1, wherein the plasma is not used as part of the process.

11. A system, comprising:

a processing chamber for performing a process on a workpiece using at least one processing gas; and

a plasma chamber coupled to the processing chamber for assisting in the analysis of at least one processing gas, the plasma chamber comprising:

a processing gas inlet port for receiving the at least one processing gas from the processing chamber;

at least one reference gas inlet port for receiving at least one reference gas from at least one reference gas source;

a cavity for receiving the at least one processing gas and the at least one reference gas; and

an energy source for exciting the at least one processing gas and the at least one reference gas to form a plasma.

12. The system of claim 11, wherein the plasma chamber further comprises at least one probe for measuring the energy of at least one species in the plasma.

13. The system of claim 11, further comprising a spectrometer, wherein the plasma chamber further comprises an optical transmission path for coupling radiation in the plasma to the spectrometer.

14. The system of claim 13, further comprising a computer, wherein the computer analyzes spectral data from the spectrometer.

15. The system of claim 14, wherein the computer modifies the process in response to the spectral data.

16. The system of claim 11, further comprising a computer, wherein the computer controls receiving the at least one reference gas from the at least one reference gas source.

17. The system of claim 11, wherein the plasma chamber further comprises an exhaust line coupled to the cavity.

18. The system of claim 11, wherein the process is selected from the group consisting of deposition and etch.

19. The system of claim 11, wherein the process is selected from the group consisting of a plasma-based process and a non-plasma-based process.

20. The system of claim 11, wherein the plasma chamber is coupled to an exhaust line on the processing chamber.

21. The system of claim 11, wherein the plasma chamber is coupled to the processing chamber via at least a pump or a valve.

22. The system of claim 11, wherein the plasma chamber is directly coupled to the processing chamber.

23. The system of claim 11, wherein the plasma is not used as part of the process.

24. A method for assisting in the analysis of at least one processing gas which performs a process in a processing chamber, comprising:

receiving at a cavity at least one processing gas from the processing chamber;

receiving at the cavity at least one reference gas from at least one reference gas source; and

forming in the cavity a plasma from the received gases.

25. The method of claim 24, further comprising measuring the energy of at least one species in the plasma.

26. The method of claim 24, further comprising coupling radiation in the plasma to an optical transmission path coupleable to a spectrometer.

27. The method of claim 24, wherein the cavity is cylindrical.

28. The method of claim 27, wherein the cavity is lined with a dielectric.

29. The method of claim 24, wherein the at least one processing gas and the at least one processing gas are received at a common location with respect to the cavity.

30. The method of claim 24, further comprising coupling the cavity to an exhaust line.

31. The method of claim 24, wherein the plasma is not used as part of the process.

32. A method for assisting in the analysis of at least one processing gas, comprising:

performing a process on a workpiece in a processing chamber;

receiving at least one processing gas from the processing chamber at a plasma chamber coupled to the processing chamber;

receiving at least one reference gas from at least one reference gas source at a plasma chamber; and

forming in the plasma chamber a plasma from the received gases.

33. The method of claim 32, further comprising measuring the energy of at least one species in the plasma.

34. The method of claim 32, further comprising coupling radiation in the plasma to a spectrometer to form spectral data.

35. The method of claim 34, further comprising modifying the process in response to the spectral data.

36. The method of claim 32, further comprising controlling receiving the at least one reference gas from the at least one reference gas source.

37. The method of claim 32, further comprising exhausting the plasma chamber.

38. The method of claim 32, wherein the process is selected from the group consisting of deposition and etch.

39. The method of claim 32, wherein process is selected from the group consisting of a plasma-based process and a non-plasma-based process.

40. The method of claim 32, wherein the plasma chamber receives the at least one processing gas via an exhaust line on the processing chamber.

41. The method of claim 32, wherein the plasma chamber receives the at least one processing gas from the processing chamber via at least a pump or a valve.

42. The method of claim 32, wherein the plasma chamber directly receives the at least one processing gas from the processing chamber.

43. The method of claim 32, wherein the plasma is not used as part of the process.

44. A plasma chamber coupleable to a processing chamber for assisting in the analysis of at least one processing gas for performing a process in a processing chamber, comprising:

a processing gas inlet port coupleable to the processing chamber for receiving the at least one processing gas from the processing chamber;

a cavity for receiving the at least one processing gas;

an energy source for exciting the at least one processing gas to form a plasma; and

at least one probe for measuring the energy of at least one species in the plasma.

45. The plasma chamber of claim 44, further comprising at least one reference gas inlet port for receiving at least one reference gas from at least one reference gas source, and wherein the energy source is further for exciting the at least one reference gas together with the at least one processing gas to form the plasma.

46. The plasma chamber of claim 44, further comprising an optical window for coupling radiation in the plasma to an optical transmission path coupleable to a spectrometer.

47. The plasma chamber of claim 44, wherein the cavity is cylindrical.

48. The plasma chamber of claim 47, wherein the cavity is lined with a dielectric.

49. The plasma chamber of claim 44, wherein the processing gas inlet port comprises a flange.

50. The plasma chamber of claim 49, wherein the at least one probe enters the cavity through the flange.

51. The plasma chamber of claim 44, wherein the at least one probe enters the cavity through a main body of the plasma chamber.

52. The plasma chamber of claim 44, further comprising an exhaust line coupled to the cavity.

53. The plasma chamber of claim 44, wherein the probe comprises a wire with an exposed tip.

54. The plasma chamber of claim 44, wherein the species is selected from the group consisting of electrons and ionized atoms or molecules.

55. The plasma chamber of claim 44, wherein the plasma is not used as part of the process.

56. A system, comprising:

a processing chamber for performing a process on a workpiece using at least one processing gas; and

a plasma chamber coupled to the processing chamber for assisting in the analysis of at least one processing gas, the plasma chamber comprising:

a processing gas inlet port coupleable to the processing chamber for receiving the at least one processing gas from the processing chamber;

a cavity for receiving the at least one processing gas;

an energy source for exciting the at least one processing gas to form a plasma; and

at least one probe for measuring the energy of at least one species in the plasma.

57. The system of claim 56, wherein the plasma chamber further comprises at least one reference gas inlet port for receiving at least one reference gas from at least one reference gas source, and wherein the energy source is further for exciting the at least one reference gas together with the at least one processing gas to form the plasma.

58. The system of claim 56, further comprising a spectrometer, wherein the plasma chamber further comprises an optical transmission path for coupling radiation in the plasma to the spectrometer.

59. The system of claim 56, wherein the plasma chamber further comprises an exhaust line coupled to the cavity.

60. The system of claim 56, further comprising a computer, wherein the computer analyzes spectral data from a spectrometer.

61. The system of claim 60, wherein the computer modifies the process in response to the spectral data and the measured energy.

62. The system of claim 56, further comprising a computer, wherein the computer controls biasing of the probe.

63. The system of claim 56, wherein the process is selected from the group consisting of deposition and etch.

64. The system of claim 56, wherein the process is selected from the group consisting of a plasma-based process and a non-plasma-based process.

65. The system of claim 56, wherein the plasma chamber is coupled to an exhaust line on the processing chamber.

66. The system of claim 56, wherein the plasma chamber is coupled to the processing chamber via at least a pump or a valve.

67. The system of claim 56, wherein the plasma chamber is directly coupled to the processing chamber.

68. The system of claim 56, further comprising a voltage source for biasing the probe tip, and wherein measuring the energy comprises monitoring a current drawn through the voltage source.

69. The system of claim 56, wherein the species is selected from the group consisting of electrons and ionized atoms or molecules.

70. The system of claim 56, wherein the plasma is not used as part of the process.

71. A method for assisting in the analysis of at least one processing gas which performs a process in a processing chamber, comprising:

receiving at a cavity the at least one processing gas from the processing chamber;
forming a plasma in the received at least one processing gas in the cavity; and
measuring the energy of at least one species in the plasma.

72. The method of claim 71, further comprising receiving at the cavity at least one reference gas from at least one reference gas source.

73. The method of claim 71, further comprising coupling radiation in the plasma to an optical transmission path coupleable to a spectrometer.

74. The method of claim 71, wherein the cavity is cylindrical.

75. The method of claim 74, wherein the cavity is lined with a dielectric.

76. The method of claim 71, wherein measuring the energy of at least one species in the plasma comprises the use of a probe.

77. The method of claim 71, wherein measuring the energy of the at least one species in the plasma comprises biasing a probe and monitoring its current.

78. The method of claim 71, wherein the probe comprises a wire with an exposed tip.

79. The method of claim 71, wherein the at least one probe enters the cavity through a flange.

80. The method of claim 71, wherein the at least one probe enters directly into the cavity.

81. The method of claim 71, wherein the species is selected from the group consisting of electrons and ionized atoms or molecules.

82. The method of claim 71, further comprising coupling the cavity to an exhaust line.

83. The method of claim 71, wherein the plasma is not used as part of the process.

84. A method for assisting in the analysis of at least one processing gas, comprising:

performing a process on a workpiece in a processing chamber;

receiving at a plasma chamber the at least one processing gas from the processing chamber;

forming a plasma in the received at least one processing gas in the plasma chamber; and

measuring the energy of at least one species in the plasma.

85. The method of claim 84, further comprising receiving at the plasma chamber at least one reference gas from at least one reference gas source, and further forming a plasma in the received at least one reference gas in the plasma chamber along with the at least one processing gas.

86. The method of claim 84, further comprising coupling radiation in the plasma to an optical transmission path coupleable to a spectrometer.

87. The method of claim 84, further comprising coupling radiation in the plasma to a spectrometer to form spectral data.

88. The method of claim 87, further comprising modifying the process in response to the spectral data and the measured energy.

89. The method of claim 84, wherein measuring the energy of at least one species in the plasma comprises monitoring current draw through a probe.

90. The method of claim 84, wherein the species is selected from the group consisting of electrons and ionized atoms or molecules.

91. The method of claim 84, further comprising coupling the cavity to an exhaust line.

92. The method of claim 84, wherein the process is selected from the group consisting of etching and depositing.

93. The method of claim 84, wherein the process is selected from the group consisting of a plasma-based process and a non-plasma-based process.

94. The method of claim 84, wherein the plasma chamber receives the at least one processing gas via an exhaust line on the processing chamber.

95. The method of claim 84, wherein the plasma chamber receives the at least one processing gas from the processing chamber via at least a pump or a valve.

96. The method of claim 84, wherein the plasma chamber directly receives the at least one processing gas from the processing chamber.

97. The method of claim 84, wherein the plasma is not used as part of the process.